

IN THE CLAIMS:

The following claims will replace all prior versions of claims in this application.

1. (Canceled)
2. (Currently Amended) The method according to claim ~~[[23]]~~ 24, further including the step of removing a membrane adjacent said tube end, or a weld overlay adjacent said tube end, or a combination thereof to a predetermined depth.
3. (Currently Amended) The method according to claim 24, further including the step of removing a weld overlay from a front portion or a back portion of said tube, or a combination thereof, with said milling head to a predetermined depth ~~either~~ simultaneously with said tube material radial thickness removal step.
4. (Previously Presented) The method according to claim 24, wherein said tube material removal step is performed to a depth of from about 0.25 to about 1.5 inches when measured from said tube end, and wherein the milling head blade has a face surface and an opposite surface with a bore extending therebetween through which a securing element connects said blade to said body, said blade having a countersink around said bore capable of receiving at least a portion of a head of said securing element.
5. (Canceled)
6. (Previously Presented) The method according to claim 4, wherein up to about 10% of said tube radial thickness is removed, wherein said depth is from about 0.25 to about 1 inch, and wherein said securing element connects said blade to said body whereby the securing element head portion has an end which is flush mounted or recess mounted in relation to said blade face.
7. (Previously Presented) The method according to claim 4, wherein said securing element connects said blade to said body whereby the securing element head portion has an end which is flush mounted or recess mounted in relation to said blade face.
8. (Currently Amended) The method according to claim 4, wherein a beveling step is performed with a second milling head, and wherein said securing element connects said blade to

said body whereby the securing element has a head portion with an end which either (a) extends from said blade face surface a first distance which is less than or equal to a second distance measured from a lower edge of the securing element head to a lower cutting edge of the blade, (b) is flush mounted in relation to said blade face, or (c) is recess mounted in relation to said blade face.

9. (Currently Amended) The method according to claim 8, wherein said ~~securing element connects said blade to said body whereby the~~ securing element head portion ~~[[has an]]~~ end ~~[[which]]~~ is (b) flush mounted or (c) recess mounted in relation to said blade face.

10. (Currently Amended) A rotary milling head for a rotary milling tool, comprising:
a cylindrical milling head body having an annular recess adapted to accept an end of a metal tube, said milling head body adapted to be connected to the rotary milling tool;

one or more cutting blades connected to said milling head body by a securing element, each said blade disposed circumferentially around the rotational axis of the milling head and the annular recess, each said blade having one or more cutting edges including a lower cutting edge, said one or more cutting edges defining an annular cutting sweep having an inner radius and an outer radius ~~at least equal to~~ greater than an outer diameter of the tube, said cutting sweep adapted to remove from about 2% to about 25% of an outer radial thickness of the tube and any weld overlay and membrane present on said tube within said annular cutting sweep, wherein said lower cutting edge extends below a lower end of said milling head body, and wherein said blade has a face surface with a bore extending therethrough through so that said securing element connects said blade to said milling head body, said blade having a countersink around said bore and receiving at least a portion of a head of said securing element.

11. (Canceled).

12. (Previously Presented) The milling head according to claim 10, wherein said securing element connects said blade to said body whereby the securing element head portion has an end which is flush mounted or recess mounted in relation to said blade face.

13. (Previously Presented) The milling head according to claim 10, wherein said securing element connects said blade to said body whereby the securing element has a head portion

which extends from said blade face surface a first distance which is less than or equal to a second distance measured from a lower edge of the securing element head to said lower cutting edge of the blade.

14. (Previously Presented) The milling head according to claim 12, wherein said blade cutting sweep inner radius is from about 2% to about 15% of said annular tube thickness.

15. (Previously Presented) The milling head according to claim 13, wherein said blade cutting sweep inner radius is from about 2% to about 15% of said annular tube thickness.

16. (Previously Presented) The milling head according to claim 12, wherein said blade cutting sweep inner radius is from about 2% to about 10% of said annular tube thickness.

17. (Previously Presented) The milling head according to claim 13, wherein said blade cutting sweep inner radius is from about 2% to about 10% of said annular tube thickness.

18. (Previously Presented) The milling head according to claim 15, wherein said first distance is less than about 95% of said second distance.

19. (Previously Presented) The milling head according to claim 15, wherein said first distance is less than about 90% of said second distance.

20. (Canceled)

21. (Currently Amended) A milling head for a rotary milling tool, comprising:
a cylindrical milling head body having an annular recess adapted to accept an end of a metal tube, said body adapted to be connected to the rotary milling tool;

one or more cutting blades connected to said milling head body by a securing element, each said blade disposed circumferentially around the rotational axis of the milling head and the annular recess, each said blade having one or more cutting edges defining an annular cutting sweep having an inner radius and an outer radius ~~at least equal to~~ greater than an outer diameter of the tube, said

cutting sweep adapted to remove an outer radial thickness from the tube in an amount of from about 2% up to about 25% of said annular tube thickness and any weld overlay and membrane present on said tube within said annular cutting sweep, wherein said blade has a face surface and an opposite surface with a bore extending therebetween through which said securing element connects said blade to said body, said blade having a countersink around said bore receiving at least a portion of a head of said securing element, and wherein said securing element connects said blade to said body whereby the securing element has a head portion with an end which either (a) extends from said blade face surface a first distance which is less than or equal to a second distance measured from a lower edge of the securing element head to a lower cutting edge of the blade, (b) is flush mounted in relation to said blade face, or (c) is recess mounted in relation to said blade face, wherein the blade lower cutting edge that extends below a lower end of the body in order to mill the tube outer diameter and any weld overlay or membrane present on the tube within the annular cutting sweep.

22. (Currently Amended) The milling head according to claim 21, wherein ~~said securing element connects said blade to said body whereby~~ the securing element head portion has an end which is (b) flush mounted or (c) recess mounted in relation to said blade face.

23. (Currently Amended) A method for preparing a metal tube end, comprising the steps of:

providing a rotary milling tool comprising a milling head adapted to at least remove a predetermined amount of tube material from an outer diameter surface of the metal tube, the rotary milling tool further including an arbor and a securing device attached to the arbor;

securing the arbor of the milling tool on the tube with the securing device; and

milling the outer diameter surface of the tube with the milling head and removing tube material from the outer diameter surface of the tube while the arbor remains stationary in the tube while the milling head rotates around the arbor.

24. (Currently Amended) The method according to claim 23, wherein the milling head comprises a cylindrical body having an annular recess, said body connected to the rotary milling tool, and one or more cutting blades connected to a cutting blade support of said body by a securing element, each said blade disposed circumferentially around the rotational axis of the milling head,

element, each said blade disposed circumferentially around the rotational axis of the milling head, each said blade having a cutting edge defining an annular cutting sweep having an inner radius that removes material from the outer diameter surface of the tube in an amount of from about 2% up to about 25% of a radial thickness of the tube, and an outer radius at least equal to said tube outer diameter, wherein the said one or more blades have a lower cutting edge that extends below a lower end of said milling head body.

25. (Currently Amended) A method for preparing a tube end, comprising the steps of:
connecting a milling head to a rotary milling tool, wherein the milling head comprises a cylindrical milling head body having an annular recess adapted to accept an end of a metal tube, said milling head body ~~adapted to be~~ connected to the rotary milling tool, and one or more cutting blades connected to said milling head body by a securing element, each said blade disposed circumferentially around the rotational axis of the milling head and the annular recess, each said blade having one or more cutting edges including a lower cutting edge, said one or more cutting edges defining an annular cutting sweep having an inner radius and an outer radius at least equal to an outer diameter of tube, said cutting sweep adapted to remove from about 2% to about 25% of an outer radial thickness of the tube and any weld overlay and membrane present on said tube within said annular cutting sweep, wherein said lower cutting edge extends below a lower end of said milling head body, and wherein said blade has a face surface with a bore extending therethrough so that said securing element connects said blade to said milling head body, said blade having a countersink around said bore and receiving at least a portion of a head of said securing element, wherein the milling tool includes an arbor to stabilize and guide the rotary milling tool during operation;
securing a securing device of the arbor within the tube; and
removing at least a circumferential outer diameter surface of the tube with the milling head, wherein the milling head rotates and the arbor remains stationary during the removal.

26. (Previously Presented) The method according to claim 25, wherein the securing device is a collet.

27. (Previously Presented) The method according to claim 25, wherein the outer radial portion of the tube is removed to a depth of at least 0.25 inch measured from an end of the tube.

28. (Previously Presented) The method according to claim 25, wherein the outer radial portion of the tube is removed to a depth of at least 0.25 inch to about 1.5 inches measured from an end of the tube.

29. (Previously Presented) The method according to claim 28, wherein the tube outer radial portion removal removes from about 2% to about 15% of the tube radial thickness.

30. (Previously Presented) The method according to claim 27, further including the step of removing a membrane adjacent said tube end, or a weld overlay adjacent said tube end, or a combination thereof with the milling head.

31. (Previously Presented) The method according to claim 25, further including the step of removing a membrane adjacent said tube end, or a weld overlay adjacent said tube end, or a combination thereof.

32. (Currently Amended) The method according to claim 25, ~~wherein said blade has a face surface with a bore extending therethrough through which said securing element connects said blade to said body, said blade having a countersink around said bore and receiving at least a portion of a head of said securing element, and wherein said blade has a lower cutting edge that extends below a lower end of the body in order to mill the tube outer diameter and any~~ further including the step of removing by milling a weld overlay or membrane or both present on the tube within said annular cutting sweep.

33. (Currently Amended) The method according to claim 27, ~~wherein said blade has a face surface with a bore extending therethrough through which said securing element connects said blade to said body, said blade having a countersink around said bore and receiving at least a portion of a head of said securing element, and wherein the blade has a lower cutting edge that extends below a lower end of the body in order to mill the tube outer diameter and any~~ further including the

step of removing by milling a weld overlay or membrane or both present on the tube within the annular cutting sweep.

34. (Currently Amended) A rotary milling tool, comprising:

a rotary milling device;

a milling head operatively connected to rotary gearing of the rotary milling device and capable of rotating around a central axis when activated by the device, wherein the milling head includes a cylindrical body having an annular recess, wherein the milling head includes one or more cutting blades connected to said body by a securing element, each said blade disposed circumferentially around the rotational axis of the milling head, each said blade having a cutting edge defining an annular cutting sweep having an inner radius which is adapted to remove an outer radial thickness from an annular metal tube in an amount of from about 2% up to about 25% of said annular tube thickness, and an outer radius at least equal to said tube outer diameter, and wherein said blade has a face surface with a bore extending therethrough through which said securing element connects said blade to said body, said blade having a countersink around said bore and receiving at least a portion of a head of said securing element, wherein the blade has a lower cutting edge that extends below a lower end of the body in order to mill the tube outer diameter and any weld overlay or membrane present on the tube within the annular cutting sweep; and

an arbor extending through a bore in the milling head and connected to the rotary milling device so that the arbor remains stationary when the milling device is activated and the milling head rotates, wherein the arbor includes a securing device and is adapted to be secured in the tube.

35. (Currently Amended) The milling tool according to claim 34, wherein ~~said securing element connects said blade to said body whereby~~ the securing element head portion has an end which is flush mounted or recess mounted in relation to said blade face.

36. (Currently Amended) The milling tool according to claim 34, wherein ~~said securing element connects said blade to said body whereby~~ the securing element has a head portion which extends from said blade face surface a first distance which is less than or equal to a second distance measured from a lower edge of the securing element head to the lower cutting edge of the blade.

37. (Previously Presented) The milling tool according to claim 35, wherein said blade cutting sweep inner radius is from about 2% to about 15% of said annular tube thickness.

38. (Previously Presented) The milling tool according to claim 36, wherein said blade cutting sweep inner radius is from about 2% to about 15% of said annular tube thickness.

39. (Currently Amended) The milling tool according to claim ~~[[37]]~~ 38, wherein said blade cutting sweep inner radius is from about 2% to about 10% of said annular tube thickness and wherein said first distance is less than about 95% of said second distance.

40. (Previously Presented) The milling tool according to claim 38, wherein said blade cutting sweep inner radius is from about 2% to about 10% of said annular tube thickness wherein said first distance is less than about 90% of said second distance.